

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 3, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Mark T. Wright, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for April 2024

DNFSB Staff Activity. The Board's INL cognizant engineer held weekly meetings to maintain awareness of site activities, including attending event fact findings, management reviews, integrated project team reviews, and facility plan of the day meetings.

Integrated Waste Treatment Unit (IWTU) Process Gas Filter (PGF) Outage. As noted in the March 2024 report, IWTU is currently shut down to determine the cause of material bypassing the PGF. Idaho Environmental Coalition (IEC) personnel conducted initial contamination and radiation surveys around the PGF inside the equipment cell to determine necessary radiological controls and containments for the anticipated work steps needed to inspect and repair the PGF. After erecting containments, IEC personnel lifted the PGF head cover with the overhead crane and performed an initial video inspection of the top of the filter bundles. The initial inspection verified that filter bypass had occurred, but that a more detailed inspection would be necessary to determine the failure mode. Before and after vacuuming the top of the filter bundle tube sheet, IEC personnel completed detailed video inspections. Analysis of these videos is continuing, but the anticipated next steps are to inspect the filter bundle hold-down hardware and remove three or four of the 18 filter bundles to allow an internal inspection looking for indications of broken filter elements. IEC personnel are developing radiological control measures and a mock-up to practice this work. The anticipated repairs will be either plugging broken filter elements if the number of compromised elements are less than about 10% of all filter elements or replacing entire filter bundles.

Update on Waste Drum Shipping from Advanced Mixed Waste Treatment Project. As noted in the January 2024 report, IEC has been investigating overpacking alternatives for BN510 waste containers older than 2020 due to the cost and availability of standard waste boxes. Pac Tec, Inc. completed testing and analysis of flexible packing bags from February to March of 2024, which showed promising results for overpacking use. IEC is now pursuing Nuclear Regulatory Commission and Department of Transportation certification of the bags, though that process is expected to take 18 to 24 months. IEC is also exploring the use of a robotic ultrasonic tester to map the thickness of the bottom and sides of waste drums up to the first structural rib. If successful, this method could be used to inspect all remaining BN510 drums to determine degradation of the drum thicknesses, though IEC has not yet developed a detailed methodology to omit overpacking based on this data. IEC intends to pursue all three overpacking options for BN510 waste.

Missed Resource Conservation and Recovery Act (RCRA) Inspection at Idaho Nuclear Technical and Engineering Center (INTEC). On April 29, 2024, IEC waste management personnel noticed that required RCRA inspections on mixed waste in the CPP-659 equipment decontamination room had not been completed as required for the previous three days. This was very similar to an INTEC event in January 2024, where waste management personnel noted missing RCRA inspections in the loading area of CPP-666. In both events, the missed inspections occurred over the weekend while turned over to another group (Balance of Plant and Spent Nuclear Fuel, respectively). Both events also involved missed "mixed waste" labels on the involved containers, and confusion using the inspection form. IEC is planning to improve the form and re-evaluate the extent of where this condition can occur.